

*epi*TRENDS

A Monthly Bulletin on Communicable Disease Epidemiology and
Public Health Practice in Washington State

West Nile Virus Update

This year saw more West Nile virus (WNV) activity in Washington State than ever before. Increased WNV activity was confirmed by human, animal, and mosquito surveillance.



Culex tarsalis mosquito
Vector of WNV in WA

WNV Cases in 2009

Thirty-six human WNV cases, including one death, have been laboratory confirmed as of November 13, 2009. These included residents of Benton, Grant, Klickitat, Spokane, Whatcom, and Yakima counties. Except for two cases who had potential exposures both out-of-state and in eastern Washington, all cases were exposed in eastern Washington. The Whatcom County resident was exposed while camping in eastern Washington. A few specimens are still pending confirmatory testing, so the final year-end count may increase (see www.doh.wa.gov/wnv).

In addition, two asymptomatic WNV infections were identified through blood donor screening, one each from Benton and Yakima counties. All blood banks in the country now routinely screen donations for WNV. CDC defines a presumptive viremic donor (PVD) as an asymptomatic person whose blood tested positive when screened for the presence of WNV; this is not counted as a case of WNV. This spring, DOH contacted all of the local blood banks to remind them of the notification requirements. During 2009 a total of six people in Washington were initially identified through blood donor screening. Investigators found that four developed symptoms after donating so are included as cases.

Of the 36 cases, 28 had neuroinvasive disease, including encephalitis, meningitis, and/or paralysis; eight had mild illnesses, mostly consisting of fever and headache. CDC estimates that for every identified neuroinvasive case there are likely 140 infections, approximately 80% of which are asymptomatic and 20% are mild febrile illnesses. Applying these statistics, we potentially had a few thousand asymptomatic infected persons in Washington, including >700 fever cases. Since WNV fever can be mild, we assume many did not seek treatment and thus were not tested.

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Likewise, national surveillance data show that the number of initial PVD reports parallels the number of WNV neuroinvasive disease at a ratio of approximately 4:1. This year in Washington, we identified 28 neuroinvasive cases and 6 PVDs, which yields a ratio of 4.6:1.

**Laboratory-confirmed Endemic Human WNV Cases
in Washington by County of Residence, 2009**

County of Residence	# Cases	# Asymptomatic Presumptive Viremic Donors (PVD)	Total # Lab-Confirmed WNV Infections
Benton	9	1	10
Grant	1	0	1
Klickitat	2	0	2
Spokane	2	0	2
Whatcom	1	0	1
Whitman	0	0	0
Yakima	21	1	22
All Counties	36	2	38

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During the 2009 season, a total of 22 birds, 71 horses, one dog, and 344 mosquito samples were WNV-positive. These animal and mosquito positives were detected in 14 counties. The majority of this WNV activity was in dry areas with irrigation or slow moving water – precisely the environment where *Culex tarsalis*, a key mosquito vector of WNV, flourishes. However, positive birds were also found in five western Washington counties: Grays Harbor, Lewis, Mason, King, and Pierce. Environmental monitoring demonstrates that WNV is firmly established in eastern Washington and continues to make inroads into western Washington.

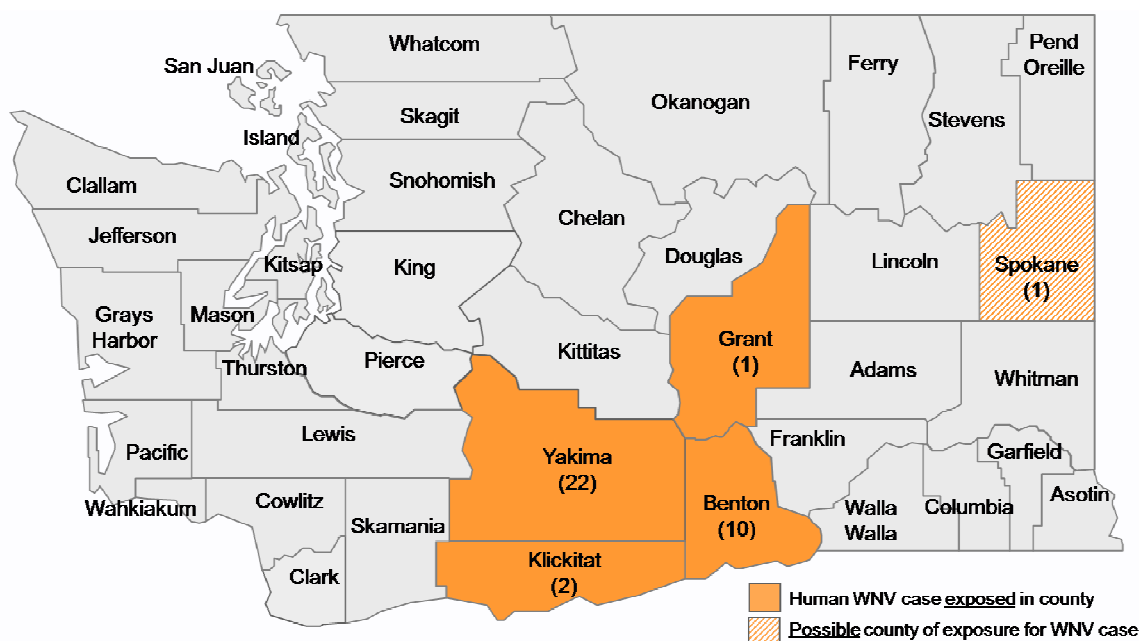
DOH Public Health Laboratories (PHL) completed confirmatory testing of all commercial positives (n=43), as well as three neuroinvasive cases that did not have commercial test results. In 2010, we intend to change our testing strategy in response to the virus establishing itself in certain parts of the state. The PHL will test the following:

- The first ~5 suspected human cases per county
- Commercial positive results with only borderline (low) levels of IgM detected
- Certain neuroinvasive cases (e.g., paralysis or young patients)
- Cases with unusual symptoms
- Special cases (e.g., pregnant women, blood/tissue donors)
- Fatal cases

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Otherwise, we will accept cases with commercial positive results without confirmatory testing. The notifiable conditions guidelines (www.doh.wa.gov/notify/nc/wnv.htm) will be updated accordingly.

Endemic Human WNV Cases in Washington by County of Most Likely Exposure, 2009



Communicable Disease Report, 2008

The annual report summarizing communicable disease surveillance for 2008 is now available on the Department of Health website. This report provides a summary of the notifiable conditions reporting from local health jurisdictions.

Other than sexually transmitted diseases, enteric pathogens remain the most commonly reported notifiable conditions. Expanded testing methods have improved detection of enterohemorrhagic *E. coli* serotypes other than O157:H7 including eight O26:H11; seven O103:H2; two O121:H19; one each O26:NM, O103:H11, O111:NM, and O145:NM. Laboratories should submit shiga toxin positive stool specimens to Washington State Public Health Laboratories for culture and serotyping.

Forty-six foodborne outbreaks were reported, affecting a total of 564 cases. Agents from restaurant outbreaks included *Clostridium perfringens* (24 cases), *E. coli* O157:H7 (43 cases), *Salmonella* Enteritidis (82 cases) and viral agents (69 cases). In addition Washington had ten *S. Litchfield* (from canteloupe), 18 *S. Saintpaul* (from produce) and 17 *S. Typhimurium* (from alfalfa sprouts) cases related to national outbreaks.

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A total of 460 pertussis cases were reported with one death in an infant. Rates were highest for children under a year of age. There were 118 cases associated with outbreaks including 80 from an outbreak in Island County.

A large measles outbreak with endemic exposure involved 19 reported cases. Case patients were associated with a large church event. The outbreak affected a highly unimmunized group. Of the 18 case patients for whom measles vaccine was indicated, only one adult had received any doses of MMR and none of the school-age case patients had received any vaccine doses.

Hepatitis A continues its dramatic decline over the past decade, dropping from 1037 cases in 1998 to 51 cases in 2008. Of the 27 case patients with exposures outside Washington all were due to foreign travel, including nine to India and nine to Mexico.

During 2008 there were three symptomatic West Nile virus infections and an asymptomatic presumptive viremic donor, all with in-state exposures. In addition to 14 cases of dengue fever, other imported arboviral conditions reported included one case of Japanese encephalitis occurring after travel to Cambodia and Vietnam and one case of Colorado tick fever after travel to Montana.

Reports of rare diseases with in-state exposure included a case of tick paralysis. Reported conditions with out-of-state or out-of-country exposures included one case each of African tick bite fever, babesiosis, coccidioidomycosis, and *Cryptococcus gattii*. A brucellosis case was diagnosed associated with unpasteurized cheese from Mexico. There were three cases of Rocky Mountain spotted fever including one case potentially exposed within Washington.



Cover of the 2008 Communicable Disease Annual Report

The full 2008 annual report is now available and can be printed in entirety from:
<http://www.doh.wa.gov/notify/other/2008cdr/cdr2008.pdf> linked from this page:
<http://www.doh.wa.gov/notify/forms/> .

Summary tables for individual conditions are available by selecting the condition name from the list at the above website and then choosing the incidence rates.